```
            RAW SEQUENCE LISTING            DATE: 01/29/2001
            PATENT APPLICATION:  US/09/701,588   TIME: 11:56:19

            Input Set : A:\Pto.amc
            Output Set: N:\CRF3\01292001\I701588.raw

            SEQUENCE LISTING
      5 (1) GENERAL INFORMATION:
      7      (i) APPLICANT: Wang, Chang Yi
      9     (ii) TITLE OF INVENTION: NOVEL LHRH PEPTIDE
     10                              IMMUNOGENS
     12    (iii) NUMBER OF SEQUENCES: 122
     14     (iv) CORRESPONDENCE ADDRESS:
     15          (A) ADDRESSEE: Morgan & Finnegan, L.L.P.
     16          (B) STREET: 345 Park Avenue
     17          (C) CITY: New York
     18          (D) STATE: NY
     19          (E) COUNTRY: USA
     20          (F) ZIP: 10154-0054
     22      (v) COMPUTER READABLE FORM:
     23          (A) MEDIUM TYPE: Floppy disk
     24          (B) COMPUTER: IBM PC compatible
     25          (C) OPERATING SYSTEM: PC Windows
     26          (D) SOFTWARE: Word 97
     28     (vi) CURRENT APPLICATION DATA:
C--> 29          (A) APPLICATION NUMBER: US/09/701,588
C--> 30          (B) FILING DATE: 29-Nov-2000
     31          (C) CLASSIFICATION:
     33    (vii) PRIOR APPLICATION DATA:
     34          (A) APPLICATION NUMBER: 09/100,414
     35          (B) FILING DATE: 20-JUNE-1998
     37   (viii) ATTORNEY/AGENT INFORMATION:
     38          (A) NAME: Maria H. Lin
     39          (B) REGISTRATION NUMBER: 29,323
     40          (C) REFERENCE/DOCKET NUMBER: 1151-158US1
     42     (ix) TELECOMMUNICATION INFORMATION:
     43          (A) TELEPHONE: 212-758-4800
     44          (B) TELEFAX: 212-751-6849
     46 (2) INFORMATION FOR SEQ ID NO: 1:
     53      (i) SEQUENCE CHARACTERISTICS:
     54          (A) LENGTH: 15 amino acids
     55          (B) TYPE: amino acid
     56          (D) TOPOLOGY: linear
     58     (ii) MOLECULE TYPE: peptide
     60     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
     62       Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu
     63        1               5                  10
     64       Glu Gly Val
     65                 15
     67 (2) INFORMATION FOR SEQ ID NO: 2:
     69      (i) SEQUENCE CHARACTERISTICS:
     70          (A) LENGTH: 16 amino acids
     71          (B) TYPE: amino acid
```

RAW SEQUENCE LISTING
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```
 72            (D) TOPOLOGY: linear
 74    (ii) MOLECULE TYPE: peptide
 76    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
 78        Asp Leu Ser Asp Leu Lys Gly Leu Leu Leu His Lys
 79          1               5                   10
 80        Leu Asp Gly Leu
 81                   15
 83 (2) INFORMATION FOR SEQ ID NO: 3:
 85       (i) SEQUENCE CHARACTERISTICS:
 86            (A) LENGTH: 16 amino acids
 87            (B) TYPE: amino acid
C--> 88            (D) TOPOLOGY: LINEAR
 90    (ii) MOLECULE TYPE: peptide
 92    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
 94        Glu Ile Ser Glu Ile Arg Gly Ile Ile Ile His Arg
 95          1               5                   10
 96        Ile Glu Gly Ile
 97                   15
104 (2) INFORMATION FOR SEQ ID NO: 4:
106       (i) SEQUENCE CHARACTERISTICS:
107            (A) LENGTH: 16 amino acids
108            (B) TYPE: amino acid
C--> 109            (D) TOPOLOGY: LINEAR
111    (ii) MOLECULE TYPE: peptide
113    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
115        Asp Val Ser Asp Val Lys Gly Val Val Val His
116          1               5                   10
117        Lys Val Asp Gly Val
118                   15
120 (2) INFORMATION FOR SEQ ID NO: 5:
122       (i) SEQUENCE CHARACTERISTICS:
123            (A) LENGTH: 16 amino acids
124            (B) TYPE: amino acid
C--> 125            (D) TOPOLOGY: LINEAR
127    (ii) MOLECULE TYPE: peptide
129    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
131        Asp Phe Ser Asp Phe Lys Gly Phe Phe Phe His
132          1               5                   10
133        Lys Phe Asp Gly Phe
134                   15
136 (2) INFORMATION FOR SEQ ID NO: 6:
138       (i) SEQUENCE CHARACTERISTICS:
139            (A) LENGTH: 15 amino acids
140            (B) TYPE: amino acid
141            (D) TOPOLOGY: linear
143    (ii) MOLECULE TYPE: peptide
149    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
151        Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
152          1               5                   10
```

```
153          Glu Gly Ile
154                  15
156 (2) INFORMATION FOR SEQ ID NO: 7:
158      (i) SEQUENCE CHARACTERISTICS:
159          (A) LENGTH: 15 amino acids
160          (B) TYPE: amino acid
161          (D) TOPOLOGY: linear
163     (ii) MOLECULE TYPE: peptide
165     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
167       Met Thr Glu Ile Arg Thr Val Ile Val Thr Arg Met
168        1               5                  10    .
169       Glu Thr Met
170                  15
172 (2) INFORMATION FOR SEQ ID NO: 8:
174      (i) SEQUENCE CHARACTERISTICS:
175          (A) LENGTH: 15 amino acids
176          (B) TYPE: amino acid
177          (D) TOPOLOGY: linear
179     (ii) MOLECULE TYPE: peptide
181     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
183       Leu Ser Glu Ile Lys Gly Val Ile Val His Lys Leu
184        1               5                  10
185       Glu Gly Val
186                  15
188 (2) INFORMATION FOR SEQ ID NO: 9:
190      (i) SEQUENCE CHARACTERISTICS:
191          (A) LENGTH: 15 amino acids
192          (B) TYPE: amino acid
193          (D) TOPOLOGY: linear
200     (ii) MOLECULE TYPE: peptide
202     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
204       Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
205        1               5                  10
206       Glu Thr Ile
207                  15
209 (2) INFORMATION FOR SEQ ID NO: 10:
211      (i) SEQUENCE CHARACTERISTICS:
212          (A) LENGTH: 15 amino acids
213          (B) TYPE: amino acid
214          (D) TOPOLOGY: linear
216     (ii) MOLECULE TYPE: peptide
218     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
220       Met Ser Glu Ile Lys Gly Val Ile Val His Lys Leu
221        1               5                  10
222       Glu Gly Met
223                  15
225 (2) INFORMATION FOR SEQ ID NO: 11:
227      (i) SEQUENCE CHARACTERISTICS:
228          (A) LENGTH: 15 amino acids
```

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229            (B) TYPE: amino acid
230            (D) TOPOLOGY: linear
232      (ii) MOLECULE TYPE: peptide
234      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
236         Leu Thr Glu Met Arg Thr Val Ile Val Thr Arg Met
237         1               5                   10
238         Glu Thr Val
239                 15
246  (2) INFORMATION FOR SEQ ID NO: 12:
248        (i) SEQUENCE CHARACTERISTICS:
249            (A) LENGTH: 15 amino acids
250            (B) TYPE: amino acid
251            (D) TOPOLOGY: linear
253      (ii) MOLECULE TYPE: peptide
255      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
257         Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
258          1               5                   10
259         Glu Thr Ile
260                 15
262  (2) INFORMATION FOR SEQ ID NO: 13:
264        (i) SEQUENCE CHARACTERISTICS:
265            (A) LENGTH: 15 amino acids
266            (B) TYPE: amino acid
267            (D) TOPOLOGY: linear
269      (ii) MOLECULE TYPE: peptide
271      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
273         Met Ser Glu Met Lys Gly Val Ile Val His Lys Met
274          1               5                   10
275         Glu Gly Met
276                 15
278  (2) INFORMATION FOR SEQ ID NO: 14:
280        (i) SEQUENCE CHARACTERISTICS:
281            (A) LENGTH: 15 amino acids
282            (B) TYPE: amino acid
283            (D) TOPOLOGY: linear
285      (ii) MOLECULE TYPE: peptide
292      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
294         Leu Thr Glu Ile Arg Thr Val Ile Val Thr Arg Leu
295          1               5                   10
296         Glu Thr Val
297                 15
299  (2) INFORMATION FOR SEQ ID NO: 15:
301        (i) SEQUENCE CHARACTERISTICS:
302            (A) LENGTH: 19 amino acids
303            (B) TYPE: amino acid
304            (D) TOPOLOGY: linear
306      (ii) MOLECULE TYPE: peptide
308      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
310         Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His
```

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PATENT APPLICATION: US/09/701,588   TIME: 11:56:19

           Input Set : A:\Pto.amc
           Output Set: N:\CRF3\01292001\I701588.raw

```
311          1            5                    10
312          Lys Ile Glu Gly Ile Leu Phe
313                    15
315 (2) INFORMATION FOR SEQ ID NO: 16:
317        (i) SEQUENCE CHARACTERISTICS:
318            (A) LENGTH: 19 amino acids
319            (B) TYPE: amino acid
320            (D) TOPOLOGY: linear
322       (ii) MOLECULE TYPE: peptide
323       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
325          Ile Ser Met Thr Glu Ile Arg Thr Val Ile Val Thr
326          1            5                    10
327          Arg Met Glu Thr Met Leu Phe
328                    15
330 (2) INFORMATION FOR SEQ ID NO: 17:
332        (i) SEQUENCE CHARACTERISTICS:
333            (A) LENGTH: 19 amino acids
334            (B) TYPE: amino acid
335            (D) TOPOLOGY: linear
343       (ii) MOLECULE TYPE: peptide
345       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
347          Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
348          1            5                    10
349          Lys Leu Glu Gly Val Leu Phe
350                    15
352 (2) INFORMATION FOR SEQ ID NO: 18:
354        (i) SEQUENCE CHARACTERISTICS:
355            (A) LENGTH: 19 amino acids
356            (B) TYPE: amino acid
357            (D) TOPOLOGY: linear
359       (ii) MOLECULE TYPE: peptide
361       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:
363          Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
364          1            5                    10
365          Arg Ile Glu Thr Ile Leu Phe
366                    15
368 (2) INFORMATION FOR SEQ ID NO: 19:
370        (i) SEQUENCE CHARACTERISTICS:
371            (A) LENGTH: 19 amino acids
372            (B) TYPE: amino acid
373            (D) TOPOLOGY: linear
375       (ii) MOLECULE TYPE: peptide
376       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:
378          Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
379          1            5                    10
381          Lys Leu Glu Gly Met Leu Phe
382                    15
389 (2) INFORMATION FOR SEQ ID NO: 20:
391        (i) SEQUENCE CHARACTERISTICS:
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VERIFICATION SUMMARY   DATE: 01/29/2001
PATENT APPLICATION: US/09/701,588   TIME: 11:56:20

Input Set : A:\Pto.amc
Output Set: N:\CRF3\01292001\I701588.raw

```
L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:88 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:109 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:125 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:1562 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:79
L:2410 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120
L:2433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121
L:2450 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122
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